

What is claimed is:

1. An apparatus for etching and cleaning objects, comprising:
 - a vessel having an upper opening and a lower opening;
 - a first supplying pipe connected to the upper opening of the vessel, the first
 - 5 supplying pipe supplying dry gas;
 - a second supplying pipe connected to the lower opening of the vessel, the
 - second supplying pipe supplying etching solution;
 - a third supplying pipe connected to the lower opening of the vessel, the third
 - supplying pipe supplying cleaning solution;
 - 10 a first draining pipe connected to the upper opening of the vessel, the first
 - draining pipe draining the cleaning solution; and
 - a second draining pipe connected to the lower opening of the vessel, the
 - second draining pipe draining the etching solution and the dry gas.
2. The apparatus of claim 1, wherein the second draining pipe is directly and
- 15 straightly connected to the lower opening of the vessel and has an inner
- diameter bigger than other pipes.
3. The apparatus of claim 1, wherein the second draining pipe has a pump for
- easy draining.
4. A method of etching and cleaning objects contained in a vessel, comprising:
- 20 etching the objects by providing etching solution into the vessel;
- exiting the etching solution from the vessel by providing pressurized gas into the
- vessel;

cleaning the objects by providing cleaning solution into the vessel; and
draining the cleaning solution from the vessel.

- 5 5. The method of claim 4, wherein draining the cleaning solution and exiting
 etching solution are processed through different draining pipes connected to
 the vessel.
6. The method of claim 4, wherein the pressurized gas is nitrogen gas.
7. The method of claim 4, wherein the etching solution is Oxalic acid solution or
 diluted Oxalic acid solution.
8. The method of claim 4, wherein the cleaning solution is deionized water.
- 10 9. The method of claim 4, wherein exiting the etching solution is done with
 pumping the etching solution out of the vessel.
- 10, The method of claim 4, further comprising, drying the objects by providing
 dry gas into the vessel after draining the cleaning solution.
11. The method of claim 10, wherein the dry gas includes IPA.